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UDC 568.2:551.782.2(55)

PLIOCENE BIRD TRACKS FROM IRAN ASSIGNED TO THE GENUS Urmiornis

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The first information on the finding of remains of a highly distinctive bird, which was named *Urmiornis*, appeared in 1908. These remains were discovered by Mecquenem [8] during the French expedition in Iran, around Maragheh, east of Lake Urmia. Mecquenem illustrated [8, fig. 16] a fragment of a tibia and metatarsus (250 cm long). The species was not identified, and the generic name (without indication that it was a new genus) was given with a question mark: *Urmiornis* (?). Only in a subsequent publication did the same author [9] introduce a specific name, *Urmiornis maraghanus* gen. et sp. nov., so that the generic name thus became valid. The present article describes in somewhat more detail the same previously found remains of the left leg of a bird that was close to storks and cranes.

Burchak-Abramovich [1] devoted a special article to the remains of *Urmiornis* found in the USSR. He noted that in 1912, V. Laskarev mentioned the presence of *Urmiornis* sp. in the *Hipparion* fauna in the Kolkotovaya bank at Tiraspol' (Moldavian SSR), in Meotian (according to Laskarev) deposits. These remains are now in the Paleontological Museum of Odessa University. *Urmiornis* was subsequently found in 1928 at a known locality of Meotian *Hipparion* fauna at Grebenniki (Odessa region) by the Institute of Geology, Acad. Sci. UkrSSR (collected by Burchak-Abramovich). In addition, bones of the same bird were found in Transcaucasia. Burchak-Abramovich studied the bones from these localities and assigned them to the same species--*Urmiornis maraghanus* Mecq. At several points he stressed the didactylous nature of this bird, considering it to be one of its distinctive features [1, pp. 90-91]. He wrote that "the didactyly testifies to the high degree of specialization of the lower extremity in adaptation to rapid running" [1, p. 91].

Translated from: O sledakh ptits iz pliotsena Irana, pripisyvayemykh rodu *Urmiornis*. Paleont. zhur., No. 3, pp. 120-121, 1989.

ISSN0031-0301/89/0003-0119$7.50/0

The didactyly of *Urmiornis* is also emphasized in the Principles of Paleontology [14, p. 669], where the systematic position of this bird is unclear (it has the same size as a crane). *U. maraghanus* "was initially described as a species of the crane order (Grues), but in the structure of the phalange and metatarsus, and especially in its didactyly, this genus is close to the ostriches." No doubts seem to have been expressed in regard to its didactyly. It is very important to note this. *Urmiornis maraghanus* is briefly characterized by Lambrecht [5, p. 521] along with a diagnosis of the genus; he regards *Urmiornis* as comparable to the cranes and storks, although he notes the differences from them.

From Lambrecht [6] we learn that the Hungarian geologist Prof. H. Böckh brought to Budapest from Iran a large block of reddish sandstone with three bird tracks, from the Pliocene series (beds with *Ostrea*) in the Jabal-Hamrin area, south of Lake Urmia. On this block (65 × 25 cm) are two tracks left by the right and one track by the left leg of the same animal. The two tracks (especially the first) are well preserved, but the third is poorly discernible. The animal was a very large tetradactylous bird with one (the first) hind and three front digits. Lambrecht judged by the general contour of the impressions of these digits that this was a bird whose general appearance resembled *Grues* (among the cranes) and *Numenius* and *Limose* (among the sandpipers). In order to ascertain which bird may have made these tracks, Lambrecht studied the literature of Pliocene birds found in the vicinity of Lake Urmia. *Struthio* sp. and *Urmiornis maraghanus* Mecq. have been described from this area. Lambrecht writes [6] that *Struthio* sp., having two digits, was immediately dropped from consideration. *Urmiornis*, although smaller, is nevertheless comparable to the bird that left these tracks. These considerations led Lambrecht to conclude that the Lake Urmia area during the Pliocene may have been inhabited not only by *Urmiornis maraghanus*, but also by another and larger species of the same genus. He named "the first fossil bird tracks from Persia" *Urmiornis abeli* n. sp. A drawing of the impression of the *Urmiornis abeli* track (after Lambrecht) was published by Lessertisseur [7, p. 119, fig. 67 C], with the comment that this is the track of an aquatic bird. The question arises: How correct is the application of the generic name *Urmiornis* to these tracks? If the bird belonged to the ostriches and was didactylous, as stated by Burchak-Abramovich [1] and Dement'yev in the Principles of Paleontology [4], the four-digit track could not have been made by it and the generic name *Urmiornis* is incorrect. However, if Mecquenem and Lambrecht are right that this was an aquatic bird close to the cranes, then it must have had not two, but four digits. Lambrecht even excluded *Struthio* from consideration, because it is didactylous. In this case Lambrecht would seem to be reasonable [6] in assigning it to a separate species of *Urmiornis*.

During the past decade, *Urmiornis* has been found at a number of palces in the USSR (the Ukraine and Kazakhstan), Mongolia and in other countries. The remains from the southern Ukraine, Moldavia and the northern Caucasus have been described by Ye. N. Kurochkin as *U. ukrainus* Kuroch., 1981; those from Kazakhstan as *U. orientalis* Kuroch., 1981; and those from Mongolia as *U. dzabghanensis* Kuroch., 1981. His recent monograph [3] contains all the new data on all the finds, including those in other countries. It becomes clear from this monograph, that, first, from the Upper Miocene on the island of Samos (Greece) a new genus and species *Amphipelargus majori* Lydekker was described in 1891 and, second, as Harrison established in 1981, the *Amphipelargus* from Samos belongs to the *Urmiornis* group and must be regarded as an older synonym of the name *Urmiornis* Mecquenem. This conclusion is also supported by Kurochkin [3, p. 61]. All the forms described as *Urmiornis* must now be assigned to *Amphipelargus* Lydekker, 1891. This genus has been placed in the order Ralliformes, suborder Grues, family Ergilornithidae Kozlova, 1960 [3, p. 60]. The type species of this genus is nevertheless considered to be *Urmiornis maraghanus* Mecq., but I do not understand why it is not *Amphipelargus majori* Lydek.--the species described at the same time as *Amphipelargus*.

The latest data established that the foot of *Amphipelargus (Urmiornis)* was didactylous and, moreover, was evolving in the direction of monodactyly, which does not occur in *Struthio* [3, p. 63].

Thus the four-digit tracks under consideration cannot have been made by *Amphipelargus* (= *Urmiornis*).

I propose, for the first and thus far only bird tracks from Iran, the new (parataxonomic) name *Iranipeda* Vialov, ichnogen. nov. Their species can be designated as *Iranipeda abeli* (Lambrecht).

These are large tetradactylous tracks. The holotype of the species should be designated the left photograph in Pl. XIX [6]. The dimensions of the digits (after Lambrecht) in mm are: I (posterior) - 57, II-100, III-100, and IV-78. It is noteworthy that the middle digit III does not protrude as much as the lateral digit II (the same is true of the other track). I measured the angles between the digits from the photograph, as follows: between I and IV - 95°, between II and III - 50°, and between III and IV - 72°. In their size and general character, the Pliocene

tracks from Iran are comparable to the large tracks from the Miocene molasse deposits of Ciscarpathia (the Stebnitskaya formation) that have been named *Avipeda filiportalis* Vialov [2]. In the latter, however, the middle digit is markedly longer than the lateral ones, and the hind digit (I) is very short.

In the classification of bird tracks that I have developed, the ichnogenus *Iranipeda* belongs to the ichnoorder Tetradactypedida.

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